AMENDMENTS TO THE CLAIMS

1. (Currently amended) Telecommunication equipment, comprising:

a switch coupled with a plurality of Ethernet ports for receiving Ethernet data frames, each Ethernet data frame including a header information, the switch operable to insert without removing any existing header information a unique port identifier into a predefined header field of each Ethernet data frame from each one of the plurality of Ethernet ports to identify the Ethernet port from which ~~the~~ each Ethernet data frame is received; and

a multiplexer coupled to the switch and operable to multiplex the Ethernet data frames containing the port identifiers into a single serial data stream, the multiplexer being operable to multiplex the Ethernet data frames containing the port identifiers from the plurality of Ethernet ports into a single synchronous payload envelope.

2. Cancelled.

3. Cancelled.

4. Cancelled.

5. (Previously presented) The telecommunication equipment, as set forth in claim 1, further comprising a subscriber access multiplexer operable to receive the single serial data stream from the multiplexer, demultiplex the serial data stream into Ethernet data frames from each Ethernet port, and route the Ethernet data frames based on the unique port identifier.

6. (Currently amended) Telecommunication equipment, comprising:

a switch having a plurality of ports for receiving data frames from a plurality of ports and switching the data frames to [~~a~~] another plurality of ports, each data frame including a header information, the switch operable to insert a unique port identifier into a predefined header field of each data frame~~s~~ from each port to identify the port from which each data frame is received; and

a multiplexer coupled to the switch and operable to multiplex the data frames containing the port identifiers from the plurality of ports into a single serial data stream, the multiplexer being operable to multiplex the data from the plurality of ports into a single synchronous payload envelope;

wherein the data frames are Ethernet data frames and the predefined header field includes a virtual local area network (LAN) field.

7. (Currently amended) Telecommunication equipment, comprising:

a switch for receiving data frames from a first plurality of ports and switching the data frames to a second plurality of ports, each data frame including a header information, the switch operable to insert without removing any existing header information a ~~unique~~ port identifier into a predefined header field of each data frame to identify the port from which ~~each~~ that data frame is received;

a multiplexer coupled to the switch and operable to multiplex the data frames from the second plurality of ports into a first single serial data stream, the multiplexer being operable to multiplex the data frames from the second plurality of ports into a single synchronous payload envelope;

a subscriber access multiplexer operable to receive data from a plurality of sender nodes in a network and operable to insert ~~the unique~~ a port identifier into the predefined header field based on an internet protocol (IP) address of the sender node of the data, and multiplex the data into a second single serial data stream;

the multiplexer being operable to receive ~~the~~ a second single serial data stream from the subscriber access multiplexer and demultiplex the data into a plurality of data frames; and

the switch being operable to switch each of the demultiplexed data frames ~~based on the unique port identifier~~ to the first plurality of ports based on a port identifier contained in the data frame.

8. (Currently amended) Telecommunication equipment, comprising:

a switch for receiving data frames from a first plurality of ports and switching the data frames to a second plurality of ports, each data frame including a header information, the switch operable to insert without removing any existing header information a unique port identifier into a predefined header field of data frame to identify the port from which each data frame is received;

a multiplexer coupled to the switch and operable to multiplex the data frames from the second plurality of ports into a single serial data stream, the multiplexer being operable to multiplex the data frames from the second plurality of ports into a single synchronous payload envelope; and

a subscriber access multiplexer operable to receive the single serial data stream from the multiplexer and route each data frame to a destination network node based on the unique port identifier, a media access control (MAC) address, and internet protocol (IP) address in each data frame.

9. (Currently amended) A method comprising:

receiving with a switch at a first node data frames from a plurality of Ethernet ports, each data frame including header information;

adding a unique port identifier to a predetermined field within the header information in each data frame from each Ethernet port, without removing header information, in order to identify the Ethernet port from which each data frame came; and

multiplexing the data frames from the plurality of Ethernet ports into a single data stream for transmission by a synchronous transmission medium to a second node.

10. Cancelled.

11. (Previously presented) The method, as set forth in claim 9, wherein multiplexing the data frames comprises multiplexing the data frames into a single synchronous payload envelope.

12. (Previously presented) A method comprising:

receiving data frames at a switch from a plurality of Ethernet ports, each data frame including header information;

adding a unique port identifier to the header information in each data frame from each Ethernet port to identify the Ethernet port from which each data frame came;

multiplexing the data frames from the plurality of Ethernet ports into a single data stream for transmission by a synchronous transmission medium;

wherein adding the unique port identifier comprises inserting the unique port identifier into a virtual local area network identifier (VID) field and each data frame is a tagged media access control (MAC) data frame.

13. (Previously presented) The method, as set forth in claim 9, further comprising converting the single serial data stream into synchronous optical network (SONET) optical signals for transmission.

14. (Currently amended) The method, as set forth in claim 9, further comprising:

receiving the single serial data stream at the second node;

demultiplexing the single serial data stream at the second node into data frames from each Ethernet port; and

routing each of the data frames from each Ethernet port based on the unique port identifier.

15. (Currently amended) The method, as set forth in claim 9, further comprising:

receiving data frames at the second node from a plurality of sender nodes in a network;

inserting into each data frame received from the plurality of sender nodes a unique port identifier based on an IP address of the sender node of the data; ~~and~~

multiplexing the data into [~~a~~] another single serial data stream for transmission;

receiving at the first node the ~~transmitted data~~ single serial data stream from the second node and demultiplexing ~~the data~~ the single serial data stream from the second node into data frames from each sender node; and

switching at the first node the demultiplexed data frames based on the unique port identifier to the first plurality of Ethernet ports.

16. (Currently amended) The method, as set forth in claim 9, further comprising receiving the single serial data stream at the second node and routing the data frames to a destination network node based on the unique port identifier, a media access control (MAC) address, and an internet protocol (IP) address in each data frame.

17. (Previously presented) A method of multiplexing data from a plurality of Ethernet ports for transmission, comprising:

receiving data frames from the plurality of Ethernet ports, each data frame including header information containing at least destination addresses;

adding a unique port identifier to a predetermined header field of each data frame from each of the plurality of Ethernet ports, without removing any header information, to identify the Ethernet port from which each data frame came;

multiplexing the data frames from the plurality of Ethernet ports into a single synchronous payload envelope; and

converting the multiplexed data frames into a optical signal for transmission.

18. Cancelled.

19. (Previously presented) A method of multiplexing data from a plurality of ports for transmission, comprising:

receiving data frames from the plurality of ports, each data frame including header information containing at least destination addresses;

adding a unique port identifier to a predetermined header field of each data frame from each port, without removing any header information, to identify the port from which the each data frame came;

multiplexing the data frames from the plurality of ports into a single synchronous payload envelope; and

converting the multiplexed data frames into a optical signal for transmission;

wherein adding the unique port identifier comprises inserting the unique port identifier into a virtual local area network identifier (VID) field and each data frame is a tagged media access control (MAC) data frame.

20. (Previously presented) The method, as set forth in claim 17, further comprising:

receiving the optical signal and converting to a single data stream;

demultiplexing the data stream from each port; and

routing the data frames from each of the Ethernet ports based on the unique port identifier.

21. (Currently amended) A method ~~of multiplexing data from a plurality of ports for transmission,~~ comprising:

receiving at a first node data frames from ~~the~~ a first plurality of ports, each data frame including header information containing at least a destination address~~es~~;

adding a unique port identifier to a predetermined header field of each data frame from each port, without removing any header information, to identify the port from which each data frame came;

multiplexing the data frames from the first plurality of ports into a single synchronous payload envelope;

converting the multiplexed data frames into a optical signal for transmission;

receiving at a second node data frames from a plurality of sender nodes in a network;

inserting into each of the data frames a unique port identifier based on an internet protocol (IP) address of the sender node of the data;

multiplexing the data frames into a single serial data stream for transmission;

receiving at the first node the data frames from the first node ~~the transmitted data~~ and demultiplexing the data frames into data frames from each sender node; and

switching the demultiplexed data based on the unique port identifier to the plurality of ports.

22. (Currently amended) A method of multiplexing data from a plurality of ports at a first node ~~for~~ transmission to a second node, comprising:

receiving data frames from the plurality of ports at the first node, each data frame including header information containing at least destination addresses;

adding a unique port identifier to a predetermined header field of each data frame from each port, without removing any header information, to identify the port from which each data frame came;

multiplexing the data frames from the plurality of ports into a single synchronous payload envelope; and

converting the multiplexed data frames into a optical signal for transmission to the second node; and

receiving the multiplexed data ~~stream~~ frames at the second node and routing each data frame to a destination network node based on the unique port identifier, a media access control (MAC) address, and internet protocol (IP) address in each data frame.